MEETING OF THE CALIFORNIA STATE BOARD OF FOOD AND AGRICUTURE

(ALL MEETINGS OPEN TO THE GENERAL PUBLIC)

Location: California Department of Food and Agriculture
1220 N Street, Main Auditorium
Sacramento, CA 95814

Contact: Helen Lopez
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MEETING MINUTES FOR JANUARY 25, 2006

Item No.

(1) **CALL TO ORDER**

(a) The meeting was called to order on Wednesday, January 25, 2006 at approximately 9:00 a.m. Al Montna, President of the California State Board of Food and Agriculture presiding.
(b) Welcoming remarks provided by Al Montna.
(c) Pledge of Allegiance.

(2) **ROLL CALL**

Roll call taken by Helen Lopez, Executive Director. A quorum was present.

Present:

Ashley Boren	Drue Brown	Ann Bacchetti-Silva
Charles Crabb	Reg Gomes	Charlie Hoppin
Craig McNamara	Niaz Mohamed	William Moncovich
Al Montna	Adan Ortega	

Absent:

Luawanna Hallstrom	Marvin Meyers	Karen Ross

(3) **APPROVAL OF MINUTES – December 14, 2005**

President Montna recommended minutes be approved as amended.

(4) **OPENING REMARKS AND INTRODUCTION**

Board President Montna welcomed and thanked everyone for attending the meeting. The board held its annual planning session on January 24th, to discuss and develop the 2006 agenda and issues that will be addressed.

Board President Montna thanked Dr. Charlie Crabb and Reg Gomes for putting together the topic of "Keeping California Competitive through Research, Knowledge, and Technology." The Board felt this issue needed to be addressed for California Agriculture.

(5) DEPARTMENTAL UPDATES

No information to report.

(6) OTHER BUSINESS

No information to report.

(7) KEEPING CALIFORNIA COMPETITIVE THROUGH RESEARCH, KNOWLEDGE AND TECHNOLOGY

Dr. Charlie Crabb, Dean, College of Agriculture at California State University, Chico, introduced the topics to be presented as the education and research continuum from the high school level where the pipeline ultimately generates the students who will attend the CSU or UC Ag programs; the CSU Ag Research Initiative; how that impacts the undergraduate programs in the CSU campuses; and UC's research continuum focusing on three campuses: Riverside, Berkeley, and Davis.

Mr. Jim Aschwanden, Executive Director of the California Agricultural Teachers Association, *The High School and Community College Pipe Line*

Mr. Aschwanden began with good news, despite some trends in overall career education in California and nationally, agricultural education enrollment at the high school level is increasing. There has been a steady rise since the mid 1980s; in 1998 & 1990 the total enrollment of agricultural education courses was at 32,000 students. Today we are at 64,000 students, so we roughly doubled enrollment in agricultural education at the high school level over the last 16 years. More and more of these students are enrolling with college aspirations and the teachers association has responded by developing curriculums for students earnestly and actively pursuing four-year+ degrees and includes consideration of students pursuing the support and technical end of agriculture. The enrollment breakdown is predominately Agricultural Science ranging from introduction to Agriculture to ornamental horticulture, floral design, and service industries supporting consumers. There has been a huge spike in Agriculture mechanics, welding and similar types of industrial technology. The ethnic breakdown of the 64,000 students; 31,000 are Caucasian, 24,000 Hispanic (over a 3rd of student population in ag education and surprising to those outside of the industry), 1,700 are Black, 1,500 are Asian, and the rest are made up of American Indian and other ethnic groups. Agricultural education is growing despite the devastation across other career tech areas. Agricultural education is working hard to upgrade the curriculum with over 650 courses statewide that meet the University of California entry requirements. The curriculum has shown, these students are performing at least at the same level as the college prep biology students. On the soft skill side of the equation, students are looking for opportunities to develop leadership skills and communication ability as offered by the Future Farmers Program. Annually, there are thousands of students who compete in public speaking events and farming procedure contests. To appeal to every student is a great challenge to teachers that must be based on a student's individual and personal ability to grow and develop. Students completing three years of an agricultural curriculum will attend higher education at a 75% rate. If we compared that to the 52% in the general academic track at the high school level, and remember that is 52% of 70% as 30% drop out between the freshmen and senior year. A 75% higher education rate in an agricultural curriculum is something to be proud of.

On the community college side, there are 116 college campuses in California and 60 of those offer agricultural education; of those 60, 18 offer comprehensive agricultural programs in

agro science and specialized programs that are area specific. There are approximately 40,000 students enrolled at the community college level with a 7,000 full time equivalence (students with 15 units or more). A lot of enrollment is in areas like landscape management, pre-med animal science programs, and technology.

The actual community college enrollment mirrors high school enrollment with the same area of focus. The agriculture pipeline has never been in better shape as far as agricultural education with more students available for the CSU and UC system. However, there are challenges and these are referred to as the perfect storm:

Factor 1, other career technical education programs across the board have been devastated in California. Nobody outside of agriculture is training the numbers needed in the area of mechanics, electrical, plumbing, sheet metal workers, and heavy equipment operators. Factor 2, there is a skills gap that is growing daily. Currently, there is shortage of 35,000 auto mechanics nationwide and 30,000 small engine technicians. Potentially, this will devastate the industrial model used to support California's economy.

Mr. Aschwanden provided the following, "Education Statistics – The Real World"

Dropout Statistics

Latest figures, courtesy of the California Department of Education –

Ninth grade Enrollment – 1999-2000 =	482,270 students
Total Number of Graduates – 2002-03 =	341,097 students
Number who vanished from the system =	141,173 students
Disappearance rate =	**30%+/-**

On to College?

UC Admission Statistics – The Best and Brightest

Fall 2001 – UC enrolled 29,782 students as first time Freshmen – 9.4% of graduates

Following long-established persistence and graduation trends:

- About 8% of those students will drop out during their first year
- Another 8% will drop out the second year
- Less than 78% will earn a degree within 6 years

Fall 2001 – UC enrolled 8,663 Community College transfer students

Following long-established persistence and graduation trends:

- About 7% will drop out their first year
- About 8% will drop out the second year
- 79.6% will earn a degree within 4 years

CSU Admission Statistics

Fall 2001 – CSU enrolled 39,945 first time freshmen – 12.6% of graduates

Following the trends:

- Over ½ of these students will need remediation in math and/or language arts

- 23.1% of these students will drop out the first year
- 10.8% will drop out the second year
- Only 57.1% will earn a degree after 12 years
- 1.4% will still be trying after 12 years

Fall 2001 – CSU enrolled 38,731 Community College transfer students

Following the trends:
- 17.7% will drop out the first year
- 6.4% will drop out the second year
- 72.3% will earn a degree within 10 years
- .8% will still be trying after 10 years

Other Interesting Information

- Fall 2004 – There were a total of 48,321 students who transferred from Community Colleges to UC/CSU, **while at the same time <u>141,792</u> holders of BA/BS degrees were enrolled in their local California Community Colleges**! A recent study indicates that the vast majority of those individuals are seeking vocational skills required for employment that were not attained as part of their degree program. Additionally, USA Today reported recently that some Vocational Technical schools are seeing their fastest growing student population group, by percentage, made up of people holding **masters'** degrees.

- In 1980, the average age of a student enrolled in an Apprenticeship program in California was 18.6 years of age – Today the average age is 29.1 years. Ten years of economic productivity and prosperity lost, most often because they didn't even know the program existed. The pipeline that used to feed those advanced training programs has been dismantled, creating a disconnect between education and job market demands.

Findings of the California Performance Review Team:
- CTE enrollment improves high school attendance and grades, higher graduation rates, the same or higher rate of enrollment in higher education, and improved employment options upon graduation.
- According to the U.S. Dept of Labor, only 22% of jobs between now and the year 2040 will require a bachelor's degree.
- The proposed A-G requirements for graduation does not respond to the California economy and labor markets, it risks increasing an already substantial dropout problem, and it ignores the fact that career technical education leads to college at least as often as the statutory high school curriculum.
- Since 1988, the number of CTE courses has declined by 22 percent, the number of CTE teachers has declined by 21 percent, and the number of students enrolled has declined by 26 percent.
- The complex labor market of the 21st century does not necessitate a single high school curriculum for all.

- Expecting all high school students to complete a college preparatory curriculum ignores the range of skills and education required by the labor market today.
- Students who do not complete high school have far fewer employment opportunities, earn less, experience more unemployment, and are more likely to end up in the correctional system than those who complete high school.
- High-risk students are eight to ten times less likely to drop out in the 11th or 12th grade if they enroll in a career technical program rather than a general program.
- Career technical education is most effective as a multi-year sequence starting with introductory level courses in high school and leading to advanced courses in college.
- The Governor should recommend that the Superintendent of Public Instruction revise the Academic Performance Index to include consideration of career technical education.

Dr. Charles Crabb, Dean, College of Agriculture, California State University, Chico*, The California State University and Applied Agricultural Research*

Dr. Charlie Crabb provided a program overview of the California State University Agricultural Research Initiative (ARI) an applied agricultural and environmental research program that leverages public funding with industry, university capital, and faculty expertise to find practical solutions for priority issues challenging California agriculture. The CSU colleges of agriculture who participate are: California State University, Fresno; California Polytechnic State University, San Luis Obispo; California State Polytechnic University, Pomona; California State University, Chico.

The ARI fosters the development and evaluation of technologies that have potential for enhancing: food safety, environmental stewardship, economic performance, and sustainability of California's agriculture industry.

The goals and objectives of ARI are: find practical solutions for priority issues confronting California agriculture and the environment; build on the basic research conducted by the University of California systems; enhance faculty professional development while providing cutting edge experiential learning opportunities for undergraduate and graduate students; to benefit agriculture, university, consumers, and the environment. ARI education, outreach, and technology transfer requires researchers to make results widely available resulting in the dissemination of information directly to producers, processors, and consumers.

ARI funding is leveraged through the California State Budget, California State University Cost Share, Federal 2006 Agriculture Appropriation Bill, Competitive Master Grant Funding, and External Match Funding.

ARI research focus areas are: Agricultural Business, Biodiversity, Biotechnology, Food Science, Natural Resources, Production and Cultural Practices, Public Policy, and Water & Irrigation Technology. ARI supported research has impacted:

sustainability of California agriculture, public health and safety, environmental conditions, regional economic development, and international competitiveness.

ARI is an example of how the California State University is working for California to help guarantee the continued vitality of California many years into the future.

Dr. Wayne Bidlack, Dean, College of Agriculture, California State Polytechnic University, Pomona
The Integration of Experiential Education into The CSU Agriculture Programs

Dr. Wayne Bidlack provided an overview of the Integration of Experiential Education into the California State University of the Agricultural Research Initiative. The critical areas of students participating in this type of research is to enhance their critical thinking; to understand the ethical dilemmas of research and how it impacts future science; to use research data to challenge misinformation; develop professional recognition by working with faculty as recognized co-authors; and to enhance self-esteem to pursue graduate degrees.

In 1995, Cal Poly's total research grants and contracts was $500,000 and only 15% of faculty was engaged in doing scholarship of any kind. In 2004/05, grants and contracts equaled $1,641,000 with 52% of faculty engaged. Cal Poly created a research committee and appointed an ARI Director to oversee the committee and funding allocation. The committee reviews new proposals and budgets for existing grants, determines awards, and oversees the indirect cost recovery (ICR) pool. ARI and ICR funding attracts faculty start up, provides capacity building, provides release time, provides summer salaries, and provides student stipends.

Overall student participation in all four campuses since the ARI was created has produced 2,100 graduates and undergraduates. For example, at Cal Poly 457 undergraduates, 165 graduate students, and 2 post docs participated. In 2004/05, there were 11 thesis and 3 senior projects.

Examples of research projects at Cal Poly are:

- Equine Muscle Physiology, altitude acclimatization in horses & mules
- Cultivar Development of Lettuce Improved Nutrition & Seed Germination
- Human Nutrition Food Service Program, folate status response to natural dietary folate requirements
- Effect of relocation on pregnancy rates and plasma cortisol levels, embryo transfer

Dissemination of research results include a CSU, ARI Research Magazine, white paper communications, web postings, scientific presentations, peer reviewed publications, and the CPP annual research showcase (students and faculty present research posters and oral presentations).

As an overview of experiential learning:

- CSU produces ½ of the agricultural degrees granted in California.

- The hands-on-learning experience in research encourages students to continue into graduate (MS & PhD) programs
- Attract the best faculty who are better prepared
    - Research experience translates into classroom learning
    - Visibility of program and college is enhanced by faculty in the forefront of their discipline
- CSU Agriculture Colleges are not trying to become solely research institutions, but do provide quality applied and basic research
    - To provide regional response to industry needs.

Dr. Frank Zalom, Department of Entomology, University of California, Davis
Advancing Integrated Pest Management

In California 10% to 20% of food and fiber production cost is associated with pests or pest management. $3 to 4 billion is spent annually on urban pest management. Historically, pests were difficult to control using crop rotations, crop diversity, sanitation, inorganic and botanical pesticides, and natural enemies. Pesticides were quickly adopted but were found to be pest resistant and induced pest outbreaks, and contaminated the environment, exposed workers and left food residues.

Integrated Pest Management (IPM) is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. California has led the way through biological control, supervised control rather than strictly preventative pesticide treatments (scouting or monitoring), integrated control, economic thresholds, and decision-making based on risk assessment. The California IPM is a partnership with research and extension infrastructure Agricultural Experiment Stations at UC Riverside, UC Davis and UC Berkeley; UC Cooperative Extension; UC Statewide IPM program; USDA/CDFA; State University Faculty; and the private sector. The private sector oversees advisory services; particularly state licensing of pest control advisors, commodity boards, canners and handlers, and seed, agrochemical and Ag biotechnology companies.

The goals of the UC Statewide IPM program are to reduce pesticide risk to the environment and protect human health; increase predictability and effectiveness of IPM; develop pest management programs that are economically and environmentally sustainable and socially appropriate; and, to provide leadership for IPM and build links across UC and to agencies and the public.

The UC Statewide IPM program consists of 424 research projects, 18 disciplines, 247 pests, 95 crops (hosts or sites), and 372 researchers with the emphasis on production research (economics) and environmental (risk reduction).

Research on water quality is conducted through alternative pest management practices and alternative site management practices.

Alternative pest management practices includes:

Dormant spray alternatives research initiated in 1990

Monitoring with no dormant spray

Alternative conventional pesticides

- Pyrethroids, e.g. esfenvalerate and permethrin

Alternative pesticides – narrow spectrum

- Spinosad, peach twig borer
- Bt bloom sprays, peach twig borer
- Oil, San Jose scale, mite eggs
- Insect growth regulators, peach twig borer or San Jose scale
- Pheromone mating disruption, peach twig borer

Alternative site management practices include:

- Different treatment timing
- Orchard floor management
- Buffer strips
- Post treatment sprinkling
- New application technologies
- Interdisciplinary research
- Communication

Air Quality, particulates and VOC's continue to be a challenge for pest management due to spray drift, dust (sulfur), Methyl bromide, EC formulations, and burning.

Dr. James Hill, Department of Plant Sciences, University of California, Davis
Tracking International Agriculture

Title XII legislation, Famine Prevention and Freedom from Hunger Improvement Act of 2000, has to do with the land grant and other university programs to contract research and the implementation of collaborative research support programs and other research collaboration led by United States universities, and involving research systems in other countries (particularly those in developing countries) focused on crops, livestock, forests, fisheries, farming resources, and food systems, with benefits to the United States and partner countries.

These programs are driven by global population growth that is expected to increase to 9 billion by the year 2050. Presently, 1 billion are below the poverty line and ½ are undernourished in developing Asia and Sub-Saharan.

The major USA supported programs and partners in international agriculture research under the umbrella of USAID (and others) are:

The Consultative Group on International Agriculture Research System

The Global Challenge Program

The Collaborative Research Support System

And others

The mission of the Consultative Group on International Agriculture Research (CGIAR) is sustainable food security, poverty reduction, and livelihood development in developing countries through scientific research and research-related activities in the fields of agriculture, forestry, fisheries, policy, and the environment.

The mission of the Global Challenge Programs is to address global problems in agriculture, attract new money to international agriculture research, and assemble teams to address food security and poverty alleviation. The Challenge Programs bring together four sets of partners, the centers of the CGIAR, advanced research institutes (ARIs), non-government organizations (NGOs), and national agricultural research and extension systems (NARES) in developing countries--to deliver the fruits of the agricultural research to resource-poor farmers.

The Collaborative Research Support System includes:

- Soils – University of Hawaii
- Sustainable Agriculture – Virginia Tech
- Integrated Pest Management – Virginia Tech
- Global livestock – UC Davis
- Bean/Cowpea – Michigan State
- BASIS – University of Wisconsin
- Peanut – University of Georgia
- Aquaculture – Oregon State
- Sorghum/Millet – University of Nebraska

University of California participation in International Agriculture Research consists of:

- Ad hoc activities to numerous to mention
- Competitive and commissioned research in all 3 global challenge programs
- Working with many of the international centers (6 formal linkage programs)
- Leading on Collaborative Research Support Program (CRSP) and working in 3 others

Other formal projects at UC Davis

- Project on food safety in India
- Horticulture and post-harvest technology in Egypt
- Tree and vine horticultural practices in Afghanistan
- Agricultural education and rural development in Vietnam

In conclusion, the University of California and the Global agenda for agriculture research, teaching and outreach should include:

- Increase undergraduate experience aboard
- Push USAID to fund long-term capacity building
- Increase foreign graduate student training
  (high non-resident tuition is a huge deterrent)
- Compete successfully for leadership of Global Horticulture Initiative Horticulture (CRSP) programs
- Horticulture and/or water/or environment CRSP
- Continued participation with CG and Global Challenge

- Participate in extension training and distance learning

Al Montna recognized Dr. Hill's performance & contributions to the rice industry.

Reg Gomes introduced Dr. Mike Roose to provide an overview of programs centered in the southern part of the state with a relatively specific example of taking basic research in laboratory and putting on the consumer's plates.

Dr. Mike Roose, Department of Botany & Plant Sciences, University of California, Riverside
UC Riverside Contribution to California Agriculture UCR AES

The Agricultural Experiment Station at UCR today consists of 140 Agricultural Experiment Stations and Cooperative Extension Faculty in 10 departments of the College of Natural and Agricultural Sciences. The mission of the UCR AES & Cooperative Extension (CE) is to discover and advance knowledge in the agricultural and environmental sciences; provide leadership in the dissemination and application of research-based knowledge in agricultural and environmental science to the people of California; and, provide opportunities for education and preparation of tomorrow's leaders in agricultural and environmental sciences.
The focus of UCR AES/CE mission includes:

- Plant science
    - Subtropical horticulture
    - Desert Crops
    - Urban horticulture
        - Approaches include:
            - Plant genomics and cell biology
            - Plant responses to biological and environmental stresses
            - Breeding and biotechnology for variety improvement
- Pest and Disease Sciences:
    - Insects
    - Plant pathogens
    - Nematodes
        - Approaches include:
            - Microbial and insect genomics
            - Vector biology
            - Invasive species research
            - Biological control
- Environmental and Natural Resource Sciences:
    - Land, water, and air resources in agricultural, urban and natural systems and at their interfaces, particularly in subtropical and arid regions
        - Approaches include:
            - Environmental toxicology and bioremediation
            - Water quality and management
            - Waste management

- Environmental economics and policy
- Biodiversity and conservation biology

- Areas not emphasized by the UCR AES/CE
  - Animal science
  - Human and community development
  - Human nutrition
  - Mammalian systems

The research and outreach continuum is county-based research and extension, campus-based extension, and campus-based research.

Methyl Bromide (MeBr) is an excellent soil fumigant with environmental and safety problems. Jim Sims, Chemist in Plant Pathology has identified methyliodide (lodomethane) as a potential replacement for MeBr due to its chemical similarity. Its transport and handling are safer because it is liquid while MeBr is gas. It does not deplete ozone, and it is more effective than MeBr for most soil-borne diseases, nematodes and weeds. Initial trails with various Specialists and Farm Advisors showed promising effects. It is licensed to Arysta Life Science and registration is in progress.

The mission of Citrus Clonal Protection Program is to provide a safe mechanism for the introduction into California of citrus varieties and to maintain blocks of trees that serve as the primary source of disease free, true to type budwood of all important fruit and rootstock varieties for California's citrus industry and citrus researchers. The basic and applied research tools provide development of DNA markers for use in breeding; genome research for identification of target genes; identification of DNA sequence for 25,000 citrus genes; development of Affymetrix DNA chip for large scale citrus mapping and gene expression studies; and, genome sequencing starting in 2006. The applications applied provide identification of stress response genes (insect feeding, iron chlorosis in calcareous soils, virus resistance, and post harvest fruit flavor changes) and distinguishing Tango from W. Murcott.

In citrus variety development is interaction of industry, AES, CE, and CDFA. Industry provides funding, identification of targets, and policy advice. UCR/AES provides funding, facilities, and research expertise. Cooperative Extension provides identification of trail collaborators; post harvest evaluation, taste panel evaluation, and cultural practices research. CDFA provides regulatory approvals for propagation and permits for tree movement within the state.

(8) UPDATE EXOTIC PEST COMMITTEE

A meeting was schedule to immediately follow the board meeting.

(9) OTHER BUSINESS

- Three board member terms have expired: Charlie Hoppin, William Moncovich, William Lyons (who has formally resigned). Dr. Charle Crabb will be replaced due to retirement.

- Corrections were made to the board minutes of the December 14, 2005 meeting.

- Al Montna requested that a letter be sent to John Davis requesting a copy of the Governor's letter of support.

- A joint workshop is scheduled for January 31, 2006, with the State Resources Control Board. Al Montna requested that time and place be emailed to board members interested in attending.

- Reg Gomes indicated the air quality (pollution) resolution is still being written and hopefully will be completed by the February meeting.

- February's meeting topic is water infrastructure and tours of water facilities. Dr. Charlie Hoppin, Marvin Meyers, and Adan Ortega will develop the curriculum.

- Al Montna requested that a letter be written to Mike Chrisman, Secretary of the CA Resources Agency stating that due to current water infrastructure issues facing the state and water and its impacts on the bay delta structural changes, the Board would like to invite him to take the lead on touring the federal and state water facilities on Tuesday, February 21st.

- The Board voted unanimously to present a resolution to Bill Pauli for his work and contributions to agriculture.

(10) COMMENTS FROM THE PUBLIC

There were no public comments

(11) CLOSING COMMENTS AND ADJOURNMENT

With no further business before the board the meeting was adjourned.